

WHAT IS CLAIMED IS:

1. An agronomically elite soybean plant of a variety having a mean whole seed total protein content of between 44% and 50%, a mean whole seed total protein plus oil content of between 64% and 70% and a commercially significant yield.
- 5 2. A plant part of the plant of claim 1.
3. The plant part of claim 2, further defined as pollen of the plant of claim 1.
- 10 4. The plant part of claim 2, further defined as an ovule of the plant of claim 1.
5. The plant part of claim 2, further defined as a cell of the soybean plant of claim 1.
6. A seed of the plant of claim 1.
- 15 7. A tissue culture of regenerable cells of the plant of claim 1, wherein the tissue culture regenerates soybean plants capable of expressing all the physiological and morphological characteristics of the plant of claim 1.
- 20 8. The tissue culture of claim 7, wherein the regenerable cells are embryos, meristematic cells, pollen, leaves, roots, root tips or flowers or are protoplasts or callus derived therefrom.
9. A soybean plant regenerated from the tissue culture of claim 7, wherein the regenerated soybean plant is capable of expressing all the physiological and morphological characteristics of
25 the plant of claim 1.
10. The soybean plant of claim 1, further comprising a single locus conversion.

11. The soybean plant of claim 10, wherein the single locus conversion comprises a dominant allele.

12. The soybean plant of claim 10, wherein the single locus conversion comprises a recessive allele.

13. The soybean plant of claim 10, wherein the single locus was stably inserted into a soybean genome by transformation.

14. The soybean plant of claim 10, wherein said single locus comprises a single gene.

15. An agronomically elite soybean plant of a variety having a mean whole seed total protein content of between 44% and 50%, a mean whole seed total protein plus oil content of between 64% and 70% and a commercially significant yield, wherein the plant is prepared by a method comprising the steps of :

(a) crossing a soybean plant of the variety SN30003 to a second variety, wherein said second variety has a commercially significant yield and wherein a sample of the seed of said variety SN30003 has been deposited under ATCC Accession No. - - - - -;

(b) selecting a progeny soybean plant resulting from said crossing;

(c) crossing the progeny soybean plant with itself or a third plant to produce a progeny plant of a subsequent generation;

(d) repeating steps (b) and (c) for an additional 3-10 generations to produce an agronomically elite soybean plant of a variety having a mean whole seed total protein content of between 44% and 50%, a mean whole seed total protein plus oil content of between 64% and 70% and a commercially significant yield.

16. A method of producing soybean seed, comprising crossing the plant of claim 1 with itself or a second soybean plant.

17. The method of claim 16, further defined as a method of preparing hybrid soybean seed, comprising crossing the plant of claim 1 to a second, distinct soybean plant.

18. The method of claim 17, wherein crossing comprises the steps of:

- (a) planting a seed of the plant of claim 1 and a second, distinct soybean plant;
- (b) growing soybean plants from said seed until said plants bear flowers;
- (c) cross pollinating a flower of the plant of claim 1 with pollen from said second soybean plant or cross pollinating a flower of said second soybean plant with pollen from the plant of claim 1; and
- (d) harvesting seed resulting from said cross pollinating.

19. A method for developing a soybean plant in a soybean breeding program comprising:

- (a) obtaining the soybean plant, or its parts, of claim 1; and
- (b) employing said plant or parts as a source of breeding material using plant breeding techniques.

20. The method of claim 19, wherein the plant breeding techniques are selected from the group consisting of recurrent selection, mass selection, bulk selection, backcrossing, pedigree breeding, genetic marker-assisted selection and genetic transformation.

21. The method of claim 20, wherein the soybean plant of claim 1 is used as a female parent.

22. The method of claim 20, wherein the soybean plant of claim 1 is used as a male parent.

23. A method of producing a soybean plant derived from the plant of claim 1, the method comprising the steps of:

- (a) preparing a progeny plant derived from the plant of claim 1 by crossing a plant of the plant of claim 1 with a second soybean plant; and
- (b) crossing the progeny plant with itself or a second plant to produce a progeny plant of a subsequent generation which is derived from the plant of claim 1.

24. The method of claim 23, further comprising:

(c) crossing the progeny plant of a subsequent generation with itself or a second plant; and

(d) repeating steps (b) and (c) for at least 2-10 additional generations to produce an soybean plant derived from the plant of claim 1.

25. The method of claim 24, further defined as a method of producing a soybean plant with increased seed protein plus oil content, wherein said soybean plant comprises increased seed protein plus oil content relative to said second soybean plant.

26. The method of claim 24, further defined as a method of producing a soybean plant with increased protein content, wherein said soybean plant comprises increased seed protein content relative to said second soybean plant.

27. The method of claim 24, further defined as a method of producing a soybean plant with increased seed oil and protein plus oil content, wherein said soybean plant comprises increased seed protein and protein plus oil content relative to said second soybean plant.

28. The method of claim 24, further comprising:

(a) crossing the plant derived from the plant of claim 1 with itself or another soybean plant to yield seed of additional progeny derived from the plant of claim 1;

(b) growing said seed under plant growth conditions to yield additional plants derived from the plant of claim 1; and

(c) repeating the crossing and growing steps of (a) and (b) from 0 to 7 times to generate further plants derived from the plant of claim 1.

29. A plant or parts thereof of a variety derived from the plant of claim 1, wherein said plant is produced by the method of claim 24 and wherein said plant has a mean whole seed total

protein content of between 44% and 50%, a mean whole seed total protein plus oil content of between 64% and 70% and has a commercially significant yield.

30. A method of producing a soybean plant having high seed protein and protein plus oil content in combination with high yield comprising:

(a) crossing a soybean plant of the variety SN30003 to a second variety, wherein said second variety has a commercially significant yield and wherein a sample of the seed of said variety SN30003 has been deposited under ATCC Accession No. - - - - -;

(b) selecting a progeny soybean plant resulting from said crossing;

(c) crossing the progeny soybean plant with itself or a third plant to produce a progeny plant of a subsequent generation;

(e) repeating steps (b) and (c) for an additional 3-10 generations to produce a soybean plant with high seed protein and protein plus oil content in combination with high yield, wherein selecting comprises selecting for seed protein content, seed oil content and/or seed yield at one or more of said generations and wherein said soybean plant has a mean whole seed total protein content of between 44% and 50%, a mean whole seed total protein plus oil content of between 64% and 70% and has a commercially significant yield.

31. The method of claim 30, wherein the progeny plant of a subsequent generation is selected at each generation for crossing based on said seed protein content, seed oil content and/or seed yield.

32. A soybean plant produced by the method of claim 30 and comprising a mean whole seed total protein content of between 44% and 50%, a mean whole seed total protein plus oil content of between 64% and 70% and has a commercially significant yield.

33. A method of producing food or feed comprising:

(a) obtaining the plant of claim 1;

- (b) cultivating said plant to maturity; and
- (c) preparing food or feed from said plant.

34. The method of claim 33, wherein said food is protein concentrate.

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35. The method of claim 33, wherein said food is protein isolate.

36. The method of claim 33, wherein said food is meal.

10 37. The method of claim 33, wherein said food is oil.

38. The method of claim 33, wherein said food is flour.

39. The method of claim 33, wherein said feed comprises soybean hulls.

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40. A method of producing a product for industrial use comprising:

- (a) obtaining the plant of claim 1;
- (b) cultivating said plant to maturity; and
- (c) preparing a product for industrial use from said plant.

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